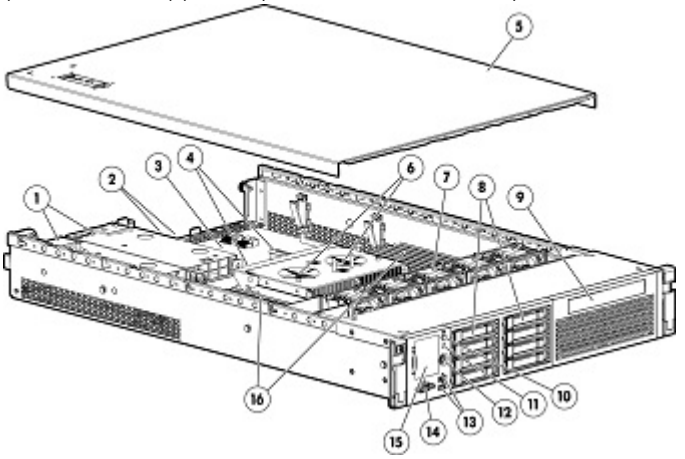
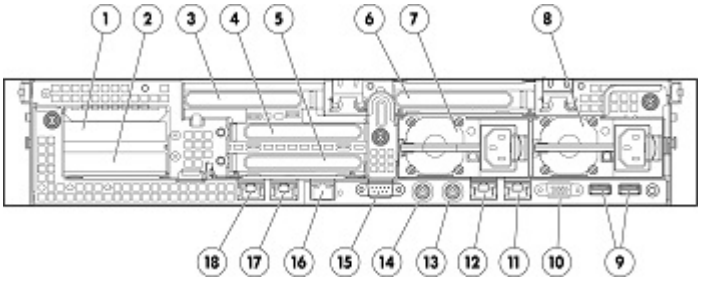
Overview

As the leading 2P 2U AMD rack server, the HP ProLiant DL385 G7 is designed with virtualization in mind, yet flexible and expandable to support any business need in many environments from corporate datacenters to sophisticated SMBs.





Front View:

1. Redundant Power Supplies
2. Two HP NC382i Dual Port Multifunction NICs
3. SD Card Reader
4. PCI Riser Slots
5. Quick Removal Access Panel
6. AMD Opteron Processors (up to 2)
7. Hot Plug Redundant Fans
8. Hard Drive Bays
9. Slimline Optical bay
10. UID LED Button
11. Health LED
12. Power On/Standby Button and System Power LED
13. USB Connectors (2)
14. Video Connector
15. System Insight Display
16. Twenty-four sockets for DDR3 Memory

Rear View:

1. PCI slot 5
2. PCI slot 6
3. PCI slot 4
4. PCI slot 2
5. PCI slot 3
6. PCI slot 1
7. Power Supply 2
8. Power Supply 1
9. USB Connectors (2)
10. Video Connector
11. NIC 1 Connector
12. NIC 2 Connector
13. Mouse Connector
14. Keyboard Connector
15. Serial Connector
16. iLO3 connector
17. NIC 3 Connector
18. NIC 4 Connector

What's New

- Introducing AMD Opteron™ 6200 series processors
- Support for new HP Hard Drive

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor One of the following depending on Model	Sixteen-Core Processors AMD Opteron™ 6282SE (2.6GHz/16-core/16MB/140W TDP) Processor AMD Opteron™ 6276 (2.3GHz/16-core/16MB/115W TDP) Processor AMD Opteron™ 6274 (2.2GHz/16-core/16MB/115W TDP) Processor AMD Opteron™ 6272 (2.1GHz/16-core/16MB/115W TDP) Processor AMD Opteron™ 6262HE (1.6GHz/16-core/16MB/85W TDP) Processor Twelve-Core Processors AMD Opteron™ 6238 (2.6GHz/12-core/16MB/115W TDP) Processor AMD Opteron™ 6234 (2.4GHz/12-core/16MB/115W TDP) Processor AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/140W TDP) Processor AMD Opteron™ 6176SE (2.3GHz/12-core/12MB/140W TDP) Processor AMD Opteron™ 6176 (2.3GHz/12-core/12MB/115W TDP) Processor AMD Opteron™ 6174 (2.2GHz/12-core/12MB/115W TDP) Processor AMD Opteron™ 6172 (2.1GHz/12-core/12MB/115W TDP) Processor AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/85W TDP) Processor Eight-Core Processors AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W TDP) Processor AMD Opteron™ 6212 (2.6GHz/8-core/16MB/115W TDP) Processor AMD Opteron™ 6140 (2.6GHz/8-core/12MB/115W TDP) Processor AMD Opteron™ 6136 (2.4GHz/8-core/12MB/115W TDP) Processor AMD Opteron™ 6134 (2.3GHz/8-core/12MB/115W TDP) Processor AMD Opteron™ 6128 (2.0GHz/8-core/12MB/115W TDP) Processor AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/85W TDP) Processor AMD Opteron™ 6128HE (2.0GHz/8-core/12MB/85W TDP) Processor NOTE: Processor wattage references reflect Thermal Design Power (TDP). For more information on TDP and Average CPU Power (ACP) visit: http://www.amd.com/acp. NOTE: Up to 2 processors supported. High Performance Model configurations include two processors, 16GB system memory, 1G storage controller memory, FBWC, DVDRW, ICE license, Redundant 750W Power Supplies, and 6 hot plug redundant fans.
Cache Memory	12MB (1 x 12MB) Level 3 cache memory
Chipset	AMD SR5690 Northbridge and SP5100 Southbridge
Upgradeability	Upgradeable to two processors

Standard Features

Memory Protection	Advanced ECC Online Spare

Memory	Type	DDR3 Registered (RDIMM) and Unbuffered (UDIMM)
	Maximum (RDIMM)	512GB
	Maximum (UDIMM)	64GB

NOTE: If only one processor is installed, only half the DIMM slots are available
NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1333MHz, 1066MHz, or 800MHz. Please see the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

Network Controller

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
NOTE: 1GB of memory is sufficient to support up to eight Total Ports. 2GB of memory is required if nine or more Total Ports have been selected.

Expansion Slots

NOTE: Up to 6 PCI slots (PCIe slots are Gen 2). Standard BTO riser with PCIe (1) x8 FL/FH, (2) x4 HL/FH. Optional second risers with PCIe (1) x8, (2) x4; or a PCIe/PCI-X mixed riser with (2) PCI-X, (1) x8; or a x16 225w PCIe riser with (1) x16; or a (2) x8 Dual Port 10GbE riser.

Primary Riser (Standard)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	1	PCI-e Gen2	x8	x16	6	Full Length/Full Height	
	2	PCIe Gen2	x4	x8	12	Half length, full height	
	3	PCIe Gen 2	x4	x8	15	Half length, full height	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported

PCIe Riser (Optional Secondary)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	4	PCIe Gen2	x8	x16	18	Full Length/Full Height	
	5	PCIe Gen2	x4	x8	24	Low Profile	
	6	PCIe Gen2	x4	x8	27	Low Profile	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported

PCIe/PCI-X Riser (Optional Primary)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes

Standard Features

	1	PCI-X	64-bit	N/A	7	Full length, Full height
	2	PCI-X	64-bit	N/A	7	Half Length, Full Height
	3	PCIe Gen 2	x8	x8	11	Half Length, Full Height

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported
NOTE: PCI-X support is limited to PCI-X cards only

PCIe/PCI-X (Optional Secondary)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	4	PCI-X	64-bit	N/A	19	Full Length/Full Height	
	5	PCI-X	64-bit	N/A	19	Low Profile	
	6	PCIe Gen2	x8	x8	23	Low Profile	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported
NOTE: PCI-X support is limited to PCI-X cards only

x16 PCIe Riser (Optional Primary)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	1	PCIe Gen2	x16	x16	6	Full Length/Full Height	Supports up to 225W

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported

x16 PCIe Riser (Optional Secondary)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	1	PCIe Gen2	x16	x16	18	Full Length/Full Height	Supports up to 225W

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported

(2) x8 PCI-E Riser (Optional Primary)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	1	PCIe Gen2	x8	x16	6	Full Length/Full Height	
	2	PCIe Gen2	x8	x16	9	Half length, full height	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported
NOTE: The shared network port is only supported in the secondary riser connector

(2) x8 PCI-E Riser (Optional Secondary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
4	PCIe Gen2	x8	x16	18	Full Length/Full Height	
5	PCIe Gen2	x8	x16	21	Low Profile	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported
NOTE: The shared network port is only supported in the secondary riser connector

Storage Controller
One of the following depending on Model

Entry Models: HP Smart Array P410i/Zero Memory Controller
Base Models: HP Smart Array P410i/256 MB Controller
HP Smart Array P410i/512MB FBWC Controller
High Performance Models: HP Smart Array P410i/1G FBWC Controller
Available upgrades: 1G FBWC, 512MB FBWC, 256MB, 512MB with BBWC, Battery kit upgrade (for the 256MB cache), and Smart Array Advanced Pack (SAAP)
NOTE: RAID 6 and 60 requires purchase of HP Smart Array Advanced Pack (516471-B21).

Internal Storage Devices

Diskette Drive	None
Optical Drive One of the following depending on Model	None Standard HP Slim SATA DVD RW Optical Drive (standard on Performance Models) NOTE: The Optical Drive option is not available when you upgrade with the additional 8 SFF drive cage, or in the LFF Models.
Hard Drives	None Standard
Hard Drive Bays	Standard (8) small form factor (SFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives • Optional second drive cage for additional (8) SFF drive bays (total 16) • Optional cage for (6) Large Form Factor SAS/SATA hard drive bays

Maximum Internal Storage

Hot Plug SFF SAS	16TB	16 x 1TB (with optional SFF drive cage)
Hot Plug LFF SAS	18TB	6 x 3TB (with optional LFF drive cage)
Hot Plug SFF SAS SSD	12.8TB	16 x 800GB (with optional SFF drive cage)
Hot Plug LFF SATA SSD	2.4TB	6 x 400GB (with optional LFF drive cage)
Hot Plug SFF SATA SSD	6.4TB	16 x 400GB (with optional SFF drive cage)

Standard Features

Interfaces	Serial	1
	Video	2 (1 front, 1 back)
	Network RJ-45 (Ethernet)	4
	iLO3 remote management port	1
	Keyboard	1
	Pointing Device (Mouse)	1
	Graphics	1
	USB 2.0 Ports	6 (2 front, 2 back, 2 inside - one for internal tape) NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.

Industry Standard Compliance	ACPI 2.0 Compliant PCIe 2.0 Compliant PCI 2.2 Compliant WOL Support Microsoft® Logo certifications USB 2.0 Support

Server Power Cords	NOTE: If customers require a local power cord, they can check the power cord matrix for the appropriate county specific sku. Please see the following power cord matrix for details: http://www.hp.com/go/powercordmatrix

Common Slot ProLiant	HP has a new design for ProLiant power. The new Common Slot Power Supply bay. This design provides the customer with commonality in power supplies across multiple platforms to save on the cost of spares and allows HP to offer multiple power solutions to fit the customers' needs. Many HP ProLiant Servers come with Common Slot, High Efficiency power supplies that allow you to right-size power supplies for your server configuration. Common Slot (CS) designates commonality of the power supply across multiple ProLiant servers. HP's new Common Slot power supplies are designed for highest efficiency to provide power efficiency without degrading performance of the ProLiant. Power Supplies will have efficiency ratings up to 94%. There are three power wattage options to choose from - 460W, 750W, and 1200W - depending on the configuration of your server. To make sure you select the correct power supply to meet your configuration, we suggest that you use the HP Power Advisor (www.hp.com/go/hppoweradvisor) to decide the "Right-Size" for your configuration. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant. It is highly recommended that you use the HP Power Calculator in defining the "Right-Size" power supply for your needs. HP's ProLiant Common Slot Power supplies (460W & 750W) meet multiple Energy Efficiency Initiatives including Climate Savers Computing Initiative GOLD, ECOS Consulting 80PLUS GOLD, and plans on offering models that meet the Energy Star for Server requirements when they are published. HP's ProLiant Common Slot Power supplies (1200W, 750W & 460W) meet multiple Energy Efficiency Initiatives including Climate Savers Computing Initiative Platinum and ECOS Consulting 80PLUS Platinum Power Supply requirements. Redundant Power: Optional (1+ 1 or n+n redundant) power supplies can be purchased through power

Standard Features

	supply option kits (see Redundant Options for part numbers). NOTE: Pre-Configured Performance models include two power supplies; Pre-Configured Base and Entry models include one power supply. On CTO models, power supply must be selected from available options.
System Fans	Hot plug fans ship standard, N+1 fully redundant (3+1) for 1 processor, (5+1) for 2 processors NOTE: Processor option kits include 2 additional fans when upgrading to 2 processors.
Required Cabling	For required cabling information, refer to the HP Web site at: www.hp.com/servers/dl385-g7
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Citrix XenServer NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page www.hp.com/support/DL385G7.
Graphics	Integrated ATI ES1000, 64MB video standard • 16 bit color: maximum resolution of 1600 x 1200 • 32 bit color: maximum resolution of 1280 x 1024 NOTE: Maximum resolution available via iLO3 remote console is 1280 x 1024 (for 32 bit color) and 1600 x 1200 (DVR max resolution).
Form Factor	Rack (2U), (3.5-inch)

HP Insight management software	HP Service Pack for ProLiant	HP Service Pack for ProLiant is an enhanced, re-packaging of ProLiant systems software and firmware, but is still based on the rich legacy of ProLiant Support Packs (PSPs) and HP Smart Update Firmware DVD that are originally found in the Insight Foundation suite for ProLiant. It is a comprehensive systems software and firmware release offered as a tested solution on all ProLiant servers supported by Insight Foundation version 8.70. It evolves beyond separate installation of HP PSPs and the HP Smart Update Firmware DVD by providing a single image that combines both of these products. It offers combined firmware and systems software packaging and improved processes for drivers, utilities, agents, non agents, and other utilities that are required to keep pace in today's rapidly expanding technology infrastructure. Main or base releases for HP Service Pack for ProLiant are planned

	approximately 3 times a year, but look for interim update releases that will capture hot fixes released between main releases. HP Service Pack for ProLiant is supported on all HP ProLiant SL/ML/DL 100, 300, 500, 700, and 900 servers and BladeSystems series servers that are supported with Insight Foundation version 8.70 and will supersede and replace Insight Foundation. It is downloadable from: www.hp.com/go/server/service_packs/updates as a web only release and is not available on media. The first release of HP Service Pack for ProLiant is Version 2011.06.0. It contains the first comprehensive collection of firmware and system software components, all tested together that include drivers, agents, non-agents, utilities, firmware packages for servers, controllers, storage, blades, enclosures, and all components and options supported by HP ProLiant Support Packs for Windows and Linux version 8.70. Additionally, VMware offline firmware updates will be included. More information can be found at this link for HP Service Pack for ProLiant: www.hp.com/go/server/service_packs
HP Insight Foundation	Insight Foundation is being baselined at version v8.70 which means the following: • Its Media Kit (contains 2 SmartStart CDs, the Firmware DVD, and the Management DVD) will continue to ship with all supported ProLiant G7 or earlier BTO servers until the last supported server is no longer shipping. • The Media Kit will not be updated past version 8.70. • ProLiant G7 or earlier CTO servers are able to order the Media Kit with the understanding that the media is not updated. Please check specific server QuickSpecs for availability of CTO Kit. • PSP and Firmware DVD downloads will be updated through 2Q 2012 at the HP Insight Foundation Suite for ProLiant downloads tab: http://www.hp.com/go/foundation Customers are urged to use the replacement product, HP Service Pack for ProLiant, instead of Insight Foundation Suite which is found at these location: • www.hp.com/go/spp • www.hp.com/go/spp/download
HP Integrated Lights-Out (iLO) for ProLiant	HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO

Standard Features

Intelligent Manageability	HP Systems Insight Manager software SmartStart Management Agent Redundant ROM Remote Flash ROM ROM-Based Setup Utility (RBSU) Integrated Management Log Automatic Server Recovery (ASR) Dynamic Sector Repairing (with Smart Array controller) Drive Parameter Tracking (with Smart Array controller) Pre-Failure Warranty (covers processors, SAS hard drives and memory)
Security	Power-on password Keyboard password QuickLock, Network Server Mode Serial interface control Administrator's password
Warranty	This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Optional Features

HP Insight management software	HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.
	HP Insight Dynamics for ProLiant	HP Insight Dynamics for ProLiant, a product option, is advanced infrastructure management software that enables IT staff to instantly adjust their environments to meet dynamic business demands by provisioning, optimizing and protecting complex infrastructure in minutes. It's a powerful toolkit, integrated-by-design, that accelerates complex technology projects and simplifies daily operations, transforming data center economics. With Insight Dynamics IT professionals can plan capacity and power continuously, balance workloads across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location. NOTE: For more information, visit: http://www.hp.com/go/insightdynamics

Optional Features

High Performance Clusters	HP Cluster Platforms	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters.
	HP HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html
	HP Cluster Management Utility	HP Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used to manage large-scale Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu
	HP HPC Linux Value Pack	HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported specially priced software bundle for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform HPC Enterprise Edition suite of tools including the LSF workload scheduler, the HP-MPI parallelization library. Also included are the HP Unified Parallel C compiler and the HP Shmem library, as well as the execution environments for the libraries and compiler. HP HPC Linux Value Pack

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.

HP Enterprise Configurator

The HP eConfigure-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator.

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem
Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

What HP ProLiant and BladeSystem Services can do for you
HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs:.

HP Technology Services meets business challenges with services offered in three packages - **Optimized Care Package, Standard Care Package, and Basic Care Package** - available for each product group. Such packaged solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support packages for servers, storage, networking and software.

Optimized Care

Optimized Care Package: Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

HP Installation and Startup for Insight Control Software
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP Critical Advantage
Provides end-to-end infrastructure support solution for business critical applications running on virtualized/x86 infrastructures, enabling the customers to cost effectively build, operate, and continuously improve their IT environment
http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA3-1772ENW

Additional Services: Microsoft or Linux or VMware education courses + Facility & technology environmental assessment services + Energy Efficiency Design, Factory Express

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Service and Support

Standard Care	Standard Care Package: Package that maintains high level of server availability HP ProLiant Server Hardware Installation Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN HP Installation and Startup for Insight Control Software Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf 3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf 3-Year , HP 24x7 Software Support for Insight Control Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up, and Software Support; Install and Startup Services for Insight Control; Microsoft or Linux or VMware education courses; +30 Proactive Select Credits, Factory Express
Basic Care	Basic Care Package: delivers minimum recommended support service level HP ProLiant Server Hardware Installation Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN 3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up and Software Support); +10 Proactive Select Credits, Factory Express
Insight Remote Support	The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers.
For more information	To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant

Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
NOTE: Not all models are available in all regions. Check with your local country HP offices for availability.
NOTE: DL385 G7 chassis has 24 DIMM slots available.

Performance Models

NOTE: Preconfigured Performance models save valuable deployment time at a discounted bundle price.

HP ProLiant DL385 G7 6282SE 2.60GHz 16-core 64GB-R Hot Plug SATA SFF 750W PS Server 654841-xx1	Processor(s)	(2) AMD Opteron™ 6282SE (2.6GHz/16-core/16MB/140W) Processors
	Cache Memory	16MB L3 cache
	Memory	64GB (8 x 8GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/1GB FBWC Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Slim SATA DVD-RW Optical Drive
	Power Supply	(2) HP 750W Common Slot Gold Hot Plug Power Supplies
	Fans	6 Hot Plug Fully Redundant Fans
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	Form Factor	Rack (2U), (3.5-inch)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

HP ProLiant DL385 G7 6174 2P 16GB-R P410i/1GB FBWC 8 SFF 750W RPS Perf IC Sever 573087-xx1	Processor(s)	(2) AMD Opteron™ 6174 (2.2GHz/12-core/12MB/80W) Processors
	Cache Memory	12MB L3 cache
	Memory	16GB (8 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/1GB FBWC Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Slim SATA DVD-RW Optical Drive
	Power Supply	(2) HP 750W Common Slot Gold Hot Plug Power Supplies
	Fans	6 Hot Plug Fully Redundant Fans
	Insight Control	HP Insight Control, No Media, single server license, including 1 year of 24x7 Technical Support and Updates
	Form Factor	Rack (2U), (3.5-inch)

Pre-configured Models

	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

HP ProLiant DL385 G7 6180SE 2P 16GB-R P410i/1GB FBWC SFF 750W RPS IC Server 636071-xx1	Processor(s)	(2) AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/105W) Processors
	Cache Memory	12MB L3 cache
	Memory	16GB (8 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/1GB FBWC Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Slim SATA DVD-RW Optical Drive
	Power Supply	(2) HP 750W Common Slot Gold Hot Plug Power Supplies
	Fans	6 Hot Plug Fully Redundant Fans
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	Form Factor	Rack (2U), (3.5-inch)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Base Models

HP ProLiant DL385 G7 6274 32GB-R Hot Plug SFF 460W PS Server 654853-xx1	Processor(s)	(2) AMD Opteron™ 6274 (2.2GHz/16-core/16MB/115W) Processor
	Cache Memory	16MB L3 cache
	Memory	32GB (4 x 8GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/512MB FBWC Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Not included on Base model
	Power Supply	(1) 460W Common Slot Gold Hot Plug Power Supply
	Fans	6 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

HP ProLiant DL385 G7 6238 16GB-R Hot Plug SFF 460W PS Server 654856-xx1	Processor(s)	(2) AMD Opteron™ 6238 (2.6GHz/12-core/16MB/115W) Processor
	Cache Memory	16MB L3 cache
	Memory	16GB (4 x 4GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/512MB FBWC Controller

Pre-configured Models

	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Not included on Base model
	Power Supply	(1) 460W Common Slot Gold Hot Plug Power Supply
	Fans	6 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
HP ProLiant DL385 G7 6172 1P 8GB-R P410i/256 8 SFF 460W PS Base Server 573088-xx1	Processor(s)	(1) AMD Opteron™ 6172 (2.1GHz/12-core/12MB/80W) Processor
	Cache Memory	12MB L3 cache
	Memory	8GB (4 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Not included on Base Model
	Power Supply	(1) 460W Common Slot Gold Hot Plug Power Supply
	Fans	4 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
HP ProLiant DL385 G7 6176 1P 8GB-R P410i/256 SFF 460W PS Server 636075-xx1	Processor(s)	(1) AMD Opteron™ 6176 (2.3GHz/12-core/12MB/80W) Processor
	Cache Memory	12MB L3 cache
	Memory	8GB (4 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Not included on Base model
	Power Supply	(1) 460W Common Slot Gold Hot Plug Power Supply
	Fans	4 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
HP ProLiant DL385 G7 6136 1P 8GB-R	Processor(s)	(1) AMD Opteron™ 6136 (2.4GHz/8-core/12MB/80W) Processor
	Cache Memory	12MB L3 cache

Pre-configured Models

P410i/256 Hot Plug 1 SFF 460W PS Base Server 585335-xx1	Memory	8GB (4 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Not included on Base model
	Power Supply	(1) 460W Common Slot Gold Hot Plug Power Supply
	Fans	4 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Entry Models

HP ProLiant DL385 G7 6128 1P 4GB-R P410i/ZM 8 SFF 460W PS Entry Server 573089-xx1	Processor(s)	(1) AMD Opteron™ 6128 (2.0GHz/8-core/12MB/80W) Processor
	Cache Memory	12MB L3 cache
	Memory	4GB (2 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/Zero Memory Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Not included on Entry model
	Power Supply	(1) 460W Common Slot Gold Hot Plug Power Supply
	Fans	4 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Pre-configured Models

High Efficiency Models

HP ProLiant DL385 G7 6128HE 1P 4GB-U P410i/ZM 8 SFF 460W PS Efficiency Server 573090-xx1	Processor(s)	(1) AMD Opteron™ 6128HE (2.0GHz/8-core/12MB/65W) Processor
	Cache Memory	12MB L3 cache
	Memory	4GB (2 x 2GB) PC3-10600 (DDR3-1333) Unbuffered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/Zero Memory Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Not Included on HE model
	Power Supply	(1) 460W Common Slot Platinum Hot Plug Power Supply
	Fans	4 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

HP ProLiant DL385 G7 6132HE 4GB-U P410i/ZM 8 SFF 460W 94 EFF PS Server 636076-xx1	Processor(s)	(1) AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/65W) Processor
	Cache Memory	12MB L3 cache
	Memory	4GB (2 x 2GB) PC3-10600 (DDR3-1333) Unbuffered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/Zero Memory Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
	Optical Drive	Not Included on HE model
	Power Supply	(1) 460W Common Slot Platinum Hot Plug Power Supply
	Fans	4 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Country Code Key	xx = 00	U.S.
	xx = 20	Brazil
	xx = 29	Japan
	xx = 37	APD
	xx = 42	Europe
	xx = AA	PRC

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Configure-to-order (CTO) servers must start with a CTO Chassis.
NOTE: FIO indicates that this option is only available as a factory installable option.

Step 1: Base Configuration (choose one of the following configurable models)

HP Models

HP ProLiant DL385 G7 SFF Configure-to-order Server — 573122-B21

Factory Integrated Model ships with:

(8) SFF Serial Attached SCSI (SAS) Drive Bays
Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
HP Smart Array P410i/Zero Memory Controller
PCI-Express Riser Cage
One IEC Power cord
Hot plug fans (fully redundant)
NOTE: 4 fans one processor models; 6 fans two processor models
Rack (2U), (3.5-inch)

HP ProLiant DL385 G7 LFF Configure-to-order Server — 573123-B21

Factory Integrated Model ships with:

(6) LFF Serial Attached SCSI (SAS) Drive Bays
NOTE: LFF configuration does not support internal optical drive
Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
HP Smart Array P410i/Zero Memory Controller
PCI-Express Riser Cage
One IEC Power cord
Hot plug fans (fully redundant)
NOTE: (4 fans one processor models; 6 fans two processor models)
Rack (2U), (3.5-inch)
NOTE: This option removes the optical media bay and 8 SFF drive bays

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HP Processors

NOTE: If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.

Sixteen-Core Processors

HP DL385 G7 AMD Opteron™ 6282SE (2.60GHz/16-core/16MB/140W TDP) FIO Processor Kit	654868-L21
HP DL385 G7 AMD Opteron™ 6276 (2.30GHz/16-core/16MB/115W TDP) FIO Processor Kit	654862-L21
HP DL385 G7 AMD Opteron™ 6274 (2.20GHz/16-core/16MB/115W TDP) FIO Processor Kit	654870-L21
HP DL385 G7 AMD Opteron™ 6272 (2.10GHz/16-core/16MB/115W TDP) FIO Processor Kit	654864-L21
HP DL385 G7 AMD Opteron™ 6262HE (1.60GHz/16-core/16MB/85W TDP) FIO Processor Kit	654866-L21

Twelve-Core Processors

	HP DL385 G7 AMD Opteron™ 6238 (2.60GHz/12-core/16MB/115W TDP) FIO Processor Kit	654872-L21
	HP DL385 G7 AMD Opteron™ 6234 (2.40GHz/12-core/16MB/115W TDP) FIO Processor Kit	657455-L21
	HP DL385 G7 AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/140W TDP) FIO Processor Kit	636080-L21
	HP DL385 G7 AMD Opteron™ 6176SE (2.3GHz/12-core/12MB/140W TDP) FIO Processor Kit	585322-L21
	HP DL385 G7 AMD Opteron™ 6176 (2.3GHz/12-core/12MB/115W TDP) FIO Processor Kit	636082-L21
	HP DL385 G7 AMD Opteron™ 6174 (2.2GHz/12-core/12MB/115W TDP) FIO Processor Kit	585320-L21
	HP DL385 G7 AMD Opteron™ 6172 (2.1GHz/12-core/12MB/115W TDP) FIO Processor Kit	585324-L21
	HP DL385 G7 AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/85W TDP) FIO Processor Kit	636086-L21
	Eight-Core Processors	
	HP DL385 G7 AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W TDP) FIO Processor Kit	663496-L21
	HP DL385 G7 AMD Opteron™ 6212 (2.60GHz/8-core/16MB/115W TDP) FIO Processor Kit	663498-L21
	HP DL385 G7 AMD Opteron™ 6140 (2.6GHz/8-core/12MB/115W TDP) FIO Processor Kit	636084-L21
	HP DL385 G7 AMD Opteron™ 6136 (2.4GHz/8-core/12MB/115W TDP) FIO Processor Kit	585326-L21
	HP DL385 G7 AMD Opteron™ 6134 (2.3GHz/8-core/12MB/115W TDP) FIO Processor Kit	585328-L21
	HP DL385 G7 AMD Opteron™ 6128 (2.0GHz/8-core/12MB/115W TDP) FIO Processor Kit	585330-L21
	HP DL385 G7 AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/85W TDP) FIO Processor Kit	636088-L21
	HP DL385 G7 AMD Opteron™ 6128HE (2.0GHz/8-core/12MB/85W TDP) FIO Processor Kit	585332-L21
HP Memory	NOTE: DIMM banks are active only when the corresponding processor socket is populated.	
	Registered DIMMs (RDIMMs)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21

	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627808-B21
	HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627810-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593921-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593923-B21
	NOTE: PC3L is a low voltage memory	
HP Power Supplies	NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 460W Common Slot Platinum Hot Plug Power Supply Kit	593188-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP 750W Common Slot Platinum Hot Plug Power Supply Kit	593831-B21
	HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21
	HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit	437573-B21
	NOTE: DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers.	

Step 3: Choose Additional Factory Integratable Options

HP Storage Controllers	HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller	491191-B21
	HP Smart Array P410/ZM 2-ports Int PCIe x8 FIO SAS Controller	462860-B21
	HP Smart Array P410/256 BBWC 2-ports Int PCIe x8 FIO SAS Controller	491195-B21
	HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller	491193-B21

HP Performance Packs	HP ProLiant DL385 G7 Performance models include the latest performance technologies and enterprise class availability features pre-installed for convenience and value. Performance packs include a 2nd processor, two additional fans, 1G/FBWC, a second 750W CS HE power supply and Insight Control (ICE) license. To complete the configuration of a Performance model, select the Slim SATA DVD-RW Optical Drive Kit (481043-B21).	
	HP DL385 G7 6174 High Performance Model FIO Performance Pack	585334-B21
	HP DL385 G7 6180SE FIO High Performance Pack	636089-B21
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	582765-B21
	HP Insight Control for Linux including 1yr 24x7 Support ML/DL Bundle 1 Server FIO License	TC203A

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below.

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Unique Options	HP StorageWorks RDX160 Removable Disk Backup System DL Server Module NOTE: Mounts in DL385 G6 second drive cage slot (160GB of Disk Storage)	AP724A
	HP StorageWorks RDX320 Removable Disk Backup System DL Server Module NOTE: 320GB of disk capacity per data cartridge. NOTE: Mounts in DL385 G7 second drive cage slot (320GB of Disk Storage)	AP725A
	HP StorageWorks RDX500 Removable Disk Backup System DL Server Module NOTE: 500GB of disk capacity per data cartridge. NOTE: Mounts in DL385 G7 second drive cage slot (500GB of Disk Storage)	AP726A
	HP StorageWorks RDX1000 Removable Disk Backup System DL Server Module NOTE: 1 TB of disk capacity per data cartridge. NOTE: Mounts in DL385 G7 second drive cage slot (1 TB of Disk Storage)	BV848A
	HP DL385 G7 8 Small Form Factor (SFF) Drive Cage Kit	607248-B21
HP Processors	Sixteen-Core Processors	
	HP DL385 G7 AMD Opteron™ 6282SE (2.60GHz/16-core/16MB/140W) Processor Kit	654868-B21
	HP DL385 G7 AMD Opteron™ 6276 (2.30GHz/16-core/16MB/115W) Processor Kit	654862-B21
	HP DL385 G7 AMD Opteron™ 6274 (2.20GHz/16-core/16MB/115W) Processor Kit	654870-B21
	HP DL385 G7 AMD Opteron™ 6272 (2.10GHz/16-core/16MB/115W) Processor Kit	654864-B21
	HP DL385 G7 AMD Opteron™ 6262HE (1.60GHz/16-core/16MB/85W) Processor Kit	654866-B21
	Twelve-Core Processors	
	HP DL385 G7 AMD Opteron™ 6238 (2.60GHz/12-core/16MB/115W) Processor Kit	654872-B21
	HP DL385 G7 AMD Opteron™ 6234 (2.40GHz/12-core/16MB/115W) Processor Kit	657455-B21
	HP DL385 G7 AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/140W) Processor Kit	636080-B21
	HP DL385 G7 AMD Opteron™ 6176SE (2.3GHz/12-core/12MB/140W) Processor Kit	585322-B21
	HP DL385 G7 AMD Opteron™ 6176 (2.3GHz/12-core/12MB/115W) Processor Kit	636082-B21
	HP DL385 G7 AMD Opteron™ 6174 (2.2GHz/12-core/12MB/115W) Processor Kit	585320-B21
	HP DL385 G7 AMD Opteron™ 6172 (2.1GHz/12-core/12MB/115W) Processor Kit	585324-B21
	HP DL385 G7 AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/85W) Processor Kit	636086-B21
	Eight-Core Processors	
	HP DL385 G7 AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W) Processor Kit	663496-B21
	HP DL385 G7 AMD Opteron™ 6212 (2.60GHz/8-core/16MB/115W) Processor Kit	663498-B21
	HP DL385 G7 AMD Opteron™ 6140 (2.6GHz/8-core/12MB/115W) Processor Kit	636084-B21
	HP DL385 G7 AMD Opteron™ 6136 (2.4GHz/8-core/12MB/115W) Processor Kit	585326-B21
	HP DL385 G7 AMD Opteron™ 6134 (2.3GHz/8-core/12MB/115W) Processor Kit	585328-B21
	HP DL385 G7 AMD Opteron™ 6128 (2.0GHz/8-core/12MB/115W) Processor Kit	585330-B21
	HP DL385 G7 AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/85W) Processor Kit	636088-B21

	HP DL385 G7 AMD Opteron™ 6128HE (2.0GHz/8-core/12MB/85W) Processor Kit	585332-B21
	NOTE: Second processor kits include additional two fans.	
HP Memory	NOTE: DIMM banks are active only when the corresponding processor socket is populated.	
	NOTE: For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator	
	Registered DIMMs (RDIMMs)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627808-B21
	HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627810-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593921-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593923-B21
	NOTE: PC3L is a low voltage memory	
HP Optical Drives	HP Slim 12.7mm SATA DVD-ROM Optical Drive	481041-B21
	HP Slim 12.7mm SATA DVD-RW Optical Drive	481043-B21
	NOTE: Included in performance models.	
	HP Mobile USB DVDRW Drive US	BU516AA#ABA
HP Hard Drives	NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.	
	NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives	

HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	619291-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) Hot Plug Enterprise 3 yr Warranty Hard Drive	627117-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
HP 146GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507125-B21
HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512545-B21
SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516828-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516816-B21
HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516814-B21
SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	605835-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-B21
SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	625031-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507616-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507614-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)	
SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	625609-B21
HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 3TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	628059-B21
HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21
SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives	
HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	571230-B21

HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	458945-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)	
SATA Hot Plug 2.5" Enterprise Mainstream Solid State Drives	
HP 400GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636597-B21
HP 200GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636595-B21
HP 120GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive	572073-B21
HP 100GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636593-B21
HP 60GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive	572071-B21
SATA Hot Plug 3.5" Midline (MDL) Solid State Drives	
HP 400GB 3G SATA MLC LFF (3.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636611-B21
HP 200GB 3G SATA MLC LFF (3.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636609-B21
HP 120GB 3G SATA LFF (3.5-inch) Midline 1yr Warranty Solid State Drive	570763-B21
HP 100GB 3G SATA MLC LFF (3.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636607-B21
HP 60GB 3G SATA LFF (3.5-inch) Midline 1yr Warranty Solid State Drive	570761-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html (Worldwide)	
6G SAS Hot Plug Enterprise Performance Solid State Drives	
HP 400GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive	632494-B21
HP 200GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive	632492-B21
6G SAS Hot Plug Enterprise Mainstream Solid State Drives	
HP 800GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	632506-B21
HP 400GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	632504-B21
HP 200GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	632502-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html (Worldwide)	

Core Options

HP Networking	Gigabit Ethernet adapters	
	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC360T PCI-E Dual Port Gigabit Server Adapter	412648-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-B21
	HP NC373T PCI-E Multifunction Gigabit Server Adapter	394791-B21
	HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21
	10 Gigabit Ethernet adapters NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each adapter. NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.	
	HP NC522SFP Dual Port 10GbE Gigabit Server Adapter	468332-B21
	HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
	HP NC550SFP Dual Port 10GbE Server Adapter	581201-B21
	HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
	NOTE: Please see the QuickSpecs for additional information: www.hp.com/go/ProLiantNICs.	
HP InfiniBand	HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA	592520-B21
	HP InfiniBand 4X DDR ConnectX-2 PCIe G2 Dual Port HCA	592521-B21
	QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21
	HP InfiniBand 4X DDR PCI-E 0 Memory Dual Port HCA	483513-B21
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html	
HP I/O Expansion Options	HP DL385G5p PCI-E Riser Kit	494323-B21
	HP DL38X (2) x8 PCI-E Riser Kit NOTE: This riser card will support Qty 2 of 10Gbe NICs or can be used for 2 additional PCIe Gen2 cards. NOTE: The shared network port is only supported in the secondary riser connection.	494326-B21
	HP DL385 G7 x8/2x4 PCI-E Riser Kit	581783-B21
	HP DL385 G7 PCI-X Riser Kit	581785-B21

Core Options

HP Power Supplies	NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 460W Common Slot Platinum Hot Plug Power Supply Kit	593188-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP 750W Common Slot Platinum Hot Plug Power Supply Kit	593831-B21
	HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21
	HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit	437573-B21
	NOTE: DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers.	

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Insight Software	HP Insight Control	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	T9074BAE
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License	TC278AAE
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	452148-B22
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Tracking License	TC275A
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
	HP Insight Control for Linux	
	HP Insight Control for Linux w/1yr 24x7 Supp ML/DL/SL Bundle Electronic 1 Svr LTU	TC203AAE
	HP Insight Control for Linux including 1yr 24x7 Support Electronic License	TC213AAE
	HP Insight Control for Linux including 1yr 24x7 Support Single Server License	TC209A
	HP Insight Control for Linux Media Kit	TC208A
	NOTE: Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately. NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: http://www.hp.com/go/ic-linux (click on Download button). NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys. NOTE: For additional License Kits, including electronic licensing options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html	
	HP Integrated Lights-Out (iLO) Advanced	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21

Additional Options

	HP Insight Software Media Kit NOTE: Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates. NOTE: This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service. NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html	436222-B21
High Performance Clusters	HP Cluster Management Utility	
	HP Cluster Management Utility Compute Node Flexible License NOTE: This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key.	QL803A
	HP Cluster Management Utility License and Media NOTE: Order a minimum of one license per cluster to purchase media including software and documentation, which will be delivered to the customer, and also licenses CMU management. No license key is delivered or required. NOTE: For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html	433257-B21
	HP HPC Linux Value Pack	
	HP High Performance Computing Linux Value Pack 1 Processor Flexible License NOTE: This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one socket (a.k.a. processor). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key.	TC293B
	HP High Performance Computing Linux Value Pack Media Kit NOTE: This part number can be used to purchase media including software and documentation, which will be delivered to the customer. NOTE: For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/13485_div/13485_div.html	TC294A
HP Drive Cage Options	HP DL385 G7 8 Small Form Factor (SFF) Drive Cage Kit	607248-B21

Additional Options

HP I/O Accelerator Options	HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers	600278-B21
	NOTE: A low-profile PCI bracket is included for use in low-profile slots.	
	HP 320GB Multi Level Cell PCIe ioDrive for ProLiant Servers	600279-B21
	NOTE: A low-profile PCI bracket is included for use in low-profile slots.	
	HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers	600281-B21
	HP 640GB Multi Level Cell PCIe ioDrive Duo for ProLiant Servers	600282-B21
	HP 1.28TB Multi Level Cell PCIe IO Accelerator	641027-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html (Worldwide)	
HP Security - TPM	HP Trusted Platform Module Option	488069-B21
	NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM.	
	NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.	
	NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.	
HP Storage Controllers	SAS Controllers	
	HP Smart Array P212 Controller	
	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
	HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462834-B21
	HP Smart Array P410 Controller	
	HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller	462862-B21
	HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller	462864-B21
	HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller	578230-B21
	HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller	572532-B21
	HP Smart Array P411 Controller	
	HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller	462830-B21
	HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller	462832-B21
	HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller	578229-B21
	HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller	572531-B21
	HP Smart Array P812 Controller	
	HP Smart Array P812/1G FBWC 2-ports Int/4-ports Ext PCIe x8 SAS Controller	487204-B21
	Optional Upgrades	

HP 256MB P-series Cache Upgrade NOTE: Supported on HP Smart Array P212 Controller and HP Smart Array P410/Zero Memory Controller only.	462968-B21
HP 512MB P-Series Battery Backed Write Cache Upgrade	462967-B21
HP 650 mAh P-Series Battery NOTE: To enable BBWC on the 256MB cache.	462969-B21
HP 512MB Flash Backed Write Cache	534916-B21
HP 1GB Flash Backed Cache	534562-B21
HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License NOTE: This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html (Smart Array P212 Controller) http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html (Smart Array P410 Controller) http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html (Smart Array P411 Controller) http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html (Smart Array P812 Controller) http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html (Smart Array Advanced Pack)	516471-B21
SAS Controller Options	
HP 24 Bay 3Gb SAS Expander Card NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/13232_div/13232_div.html (SAS Expander Card)	468406-B21
SAS HBA	
HP Modular Smart Array SC08e 2-ports Ext PCIe x8 SAS Host Bus Adapter NOTE: This is a 2 x4 External Port HBA NOTE: This is only approved for the HP P2000 G3 SAS Modular Smart Array. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/13651_div/13651_div.html (SC08e 6Gb HBA)	614988-B21
SCSI HBA	
HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter NOTE: Recommended HBA for SCSI tape drive connect. NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA)	412911-B21

HP Backup & Recovery Software	Data Protector Express	
	HP Data Protector Express V5.0 for 1 Server E-LTU	TC330AAE
	HP Data Protector Express V5.0 for 3 Servers E-LTU	TC331AAE
	HP Data Protector Express V5.0 for 10 Servers E-LTU	TC332AAE
	HP Basic Upgrade to Data Protector Express V5 for 1 Server E-LTU	TC333AAE
	NOTE: One of these Data Protector Express base products is required. To see available options: http://www.hp.com/go/dataprotectorexpress	
HP Tape Backup	NOTE: For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/go/connect.	
	HP DAT 320 USB in 1U Rack-mount Kit	AP835B
	HP 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended.	AK377A
	HP DAT 320 SAS Internal Tape Drive NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	AJ830A
	HP LTO-4 Ultrium 1760 SAS (1) in 1U Rack-mount Kit NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	EH946B
	HP LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rackmount NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	EJ014A
	HP 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL536A
	HP MSL2024 1 LTO-4 Ultrium 1760 SAS Tape Library	AK378A
	HP MSL2024 1 LTO-5 Ultrium 3000 SAS Tape Library NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL537A
	HP MSL4048 2 LTO-4 Ultrium 1760 SAS Tape Library	AK380A
	HP MSL4048 2 LTO-5 Ultrium 3000 SAS Tape Library NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	BL538A

Additional Options

HP Disk Backup	NOTE: For the complete range of D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk backup products see: http://www.hp.com/go/connect.	
	HP D2D Backup Systems with Backup Data Deduplication	
	HP D2D2502i Backup System NOTE: 1.5TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EJ001B
	HP D2D2504i Backup System NOTE: 3.0TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EJ002B
	HP StorageWorks D2D4004i Backup System NOTE: 3.0TB (expandable to 7.5TB) of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EH938A
	HP D2D4112 Backup System NOTE: 9.0TB (expandable to 18.0TB) of useable network disk backup capacity. Fibre Channel SAN connected appliance. Direct server attach is not supported, requires connection via SAN fabric.	EH993B
	HP RDX Removable Disk Backup Systems USB NOTE: Connect the USB tape power connector to the secondary SAS power connector on the system board. Refer to the hood label for SAS power connector locations on the system board. NOTE: Mounts in DL385 G7 second drive cage slot.	
	HP StorageWorks RDX160 Removable Disk Backup System DL Server Module NOTE: Mounts in DL385 G6 second drive cage slot (160GB of Disk Storage)	AP724A
	HP StorageWorks RDX320 Removable Disk Backup System DL Server Module NOTE: 320GB of disk capacity per data cartridge.	AP725A
	HP StorageWorks RDX500 Removable Disk Backup System DL Server Module NOTE: 500GB of disk capacity per data cartridge.	AP726A
	HP StorageWorks RDX750 Removable Disk Backup System DL Server Module NOTE: 750GB of disk capacity per data cartridge.	AW578A
	HP StorageWorks RDX1000 Removable Disk Backup System DL Server Module NOTE: 1 TB of disk capacity per data cartridge.	BV848A

Additional Options

HP Storage Options	Fibre Channel HBA	
	NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	Brocade Fibre Channel HBAs	
	HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter	AP769A
	HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter	AP770A
	HP 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter	AP767A
	HP 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter	AP768A
	Emulex Fibre Channel HBAs	
	HP 81E 8Gb Single Port PCI-e Fibre Channel Host Bus Adapter	AJ762A
	HP 82E 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ763A
	HP FC2142SR 4Gb PCIe Host Bus Adapter	A8002A
	HP FC2242SR 4Gb PCIe DC Host Bus Adapter	A8003A
	QLogic Fibre Channel HBAs	
	HP 81Q PCI-e Fibre Channel Host Bus Adapter	AK344A
	HP 82Q 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ764A
	HP FC1142SR 4Gb PCIe Host Bus Adapter	AE311A
	HP FC1242SR 4Gb PCIe DC Host Bus Adapter	AE312A
	SCSI HBA	
	HP U320e SCSI Dual Channel Host Bus Adapter	AH627A
	NOTE: Recommended HBA for MSL SCSI Tape Library connect.	
	Converged Network Adapter	
	HP CN1100E Dual Port Converged Network Adapter	BK835A
	HP CN1000E Dual Port Converged Network Adapter	AW520A
HP Modular Smart Array	MSA SAN Storage Arrays	
	HP MSA70 Array	418800-B21
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html (Worldwide)	
	Disk Enclosures	
	HP D2600 Disk Enclosure	AJ940A
	HP D2700 Disk Enclosure	AJ941A
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html	
HP Uninterruptible Power Systems	HP Rack-mountable UPS	
	HP R1500 G2 UPS	
	HP R1500 G2 1440VA Low Voltage NA 1U Rackmount Uninterruptible Power System	AF419A
	HP R1500 G2 1440VA INTL 1U Rackmount Uninterruptible Power System	AF418A

HP R1500 G2 1200kVA Low Voltage JP 1U Rackmount Uninterruptible Power System	AF421A
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html (Worldwide)	
HP R1500 G3 Uninterruptible Power Supply (UPS)	
HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
HP R1.5kVA G3 1U JP/TW Uninterruptible Power System	AF470A
HP R1.5kVA G3 1U INTL Uninterruptible Power System	AF471A
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html (Worldwide)	
HP Rack-Mountable R5500 UPS	
HP R5500 6000VA INTL 3U Rackmount Uninterruptible Power System	AF416A
HP R5500 5000kVA NA/JP 3U Rackmount Uninterruptible Power System	AF426A
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html (Worldwide)	
HP R/T3000 Uninterruptible Power System (UPS)	
HP R/T3000 3300VA High Voltage NA/JPN 2U Rackmount Uninterruptible Power System	AF453A
HP R/T3000 3300VA INTL 2U Rackmount Uninterruptible Power System	AF454A
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13417_div/13417_div.html (Worldwide)	
HP R/T3000 G2 Uninterruptible Power System (UPS)	
HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System	AF468A
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide)	
R5000 Uninterruptible Power System (UPS)	
HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide)	
R7000 Uninterruptible Power System (UPS)	
HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html (Worldwide)	

NOTE: Additional HP Uninterruptible Power Systems (UPS) are available for this equipment. For information on all HP UPSs and accessories please go to www.hp.com/products/ups (Worldwide)

NOTE: For additional information on sizing your HP UPS, please reference: http://www.upssizer.com

NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

Power Distribution Units	**HP Monitored Power Distribution Unit: Half Rack Version**	
	HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF914A
	HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF915A
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF504A
	HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF506A
	HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit	AF508A
	HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF510A
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html (Worldwide)	
	Modular Power Distribution Units 1U/0U (Up to 32 outlets)	
	NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	
	HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit	252663-D72
	HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit	252663-D73
	HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit	252663-B31
	HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit	252663-B24
	NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.	
	NOTE: Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)	
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu.	
	NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.	

Additional Options

HP Intelligent Power Distribution Units (iPDU)	**iPDU Core Units**	
	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
	HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
	HP 11.4kVA 16A 415V Three Phase L22-20 NA Core Intelligent Power Distribution Unit	AF900A
	HP 17.3kVA 24A 415V Three Phase L22-30 NA Core Intelligent Power Distribution Unit	AF902A
	HP 17.3kVA 24A 415V Three Phase IEC309 NA Core Intelligent Power Distribution Unit	AF901A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html (Worldwide)	
HP Rack Series	**HP Rack 10000 G2 Series** (Carbon/Graphite Metallic)	
	HP 10642 G2 Pallet Universal Rack	AF001A
	HP 10642 G2 Shock Universal Rack	AF002A
	HP 10642 G2 1200mm deep Shock Rack	AF092A
	HP 10647 G2 1200mm deep Shock Rack	AF094A
	NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
	NOTE: The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors. CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm). CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.	
	NOTE: Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.	

HP Rack Options	**Keyboards and Monitors**	
	HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13731_div/13731_div.html (Worldwide)	
	HP Server Console Switches	
	HP Server Console 0x2x8 Port Analog Switch	AF616A
	HP Server Console 0x2x16 Port Analog Switch	AF617A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html (Worldwide)	
	HP Server Console Switch G2 with Virtual Media & CAC	
	HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
	HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html (Worldwide)	
	HP IP Console Switch G2 with Virtual Media & CAC	
	HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
	HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html (Worldwide)	

HP USB and SD Options	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 4GB Secure Digital High Capacity Flash Media Kit NOTE: Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: http://www.hp.com/go/proliantvirtualization.	580387-B21
	HP 2GB USB Flash Media Drive Key Kit NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.	608447-B21

Additional Options

HP Care Pack Services	Hardware Services Response On-site Service	
	HP 3 year 4 hour 13x5 ProLiant DL38x Hardware Support	U4544E
	HP 4 year 4 hour 13x5 ProLiant DL38x Hardware Support	U8101E
	HP 5 year 4 hour 13x5 ProLiant DL38x Hardware Support	U8067E
	HP 3 year 4 hour 24x7 ProLiant DL38x Hardware Support	U4545E
	HP 5 year 4 hour 24x7 ProLiant DL38x Hardware Support	U8084E
	Hardware Services Call to Repair On-site Service	
	HP 3 year 6 hour 24x7 Call to Repair ProLiant DL38x Hardware Support	U4546E
	HP 4 year Next business day ProLiant DL38x Hardware Support	UA010E
	HP 5 year Next business day ProLiant DL38x Hardware Support	UA009E
	HP 3 year 24x7 24 hour Call to Repair ProLiant DL38x Hardware Support	UP717E
	HP 4 year 24x7 24 hour Call to Repair ProLiant DL38x Hardware Support	UP718E
	HP 5 year 24x7 24 hour Call to Repair ProLiant DL38x Hardware Support	UP719E
	Installation & Start-up Services	
	HP Install ProLiant DL38x Service	U4554E
	HP Startup ProLiant DL38x Service	U4555E
	Support Plus 24	
	HP 3 year Support Plus 24 Microsoft ProLiant DL38x Service	U4557E
	HP 3 year Support Plus 24 SuSE ProLiant DL38x Service	U6312E
	NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack.	

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

Memory configurations

- This server supports 2GB to 512GB of system memory using DDR3 2GB, 4GB, 8GB, 16GB and 32GB memory modules across 24 memory sockets.
- For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator

Advanced ECC memory

- Advanced ECC memory is the memory protection mode for this server. In Advanced ECC, the server does not fail because of correctable memory errors. The server provides notification if the level of correctable errors exceeds a pre-defined threshold rate.
- Advanced ECC provides additional protection over standard ECC because it is possible to correct certain memory errors that would otherwise be uncorrectable and result in a server failure.
- Whereas standard ECC can correct single-bit memory errors, Advanced ECC can correct single-bit memory errors and multi-bit memory errors if all failed bits are on the same DRAM device on the memory module.

Online Spare memory

- Online Spare memory mode is a higher level of memory protection that complements Standard Memory mode with Advanced ECC. With Online Spare mode, a DIMM with a rank of memory at least as large as the other ranks in the system, or memory board, is designated as the Online Spare rank.2 If one of the other DIMMs exceeds a threshold rate of correctable memory errors, the affected rank of memory within that DIMM is taken offline and the data is copied to the Online Spare rank. This capability maintains server availability and memory reliability without service intervention or server interruption. The DIMM that exceeded the error threshold can be replaced at the customer's convenience during a scheduled shutdown. Online Spare reduces the chance of an uncorrectable error bringing down the system; however, it does not fully protect the system against uncorrectable memory errors.
- Online Spare mode is beneficial to businesses with sites that do not have IT staff available to service a failure, do not always have replacement memory readily available, or cannot bring down the server until a scheduled shutdown. The cost of implementation for Online Spare over Advanced ECC is the hardware cost of the extra DIMMs for the spare memory bank.
- The user configures the system for Online Spare mode through the RBSU3. Online Spare configuration requirements vary for each server series, but it does not require operating system support or special software beyond the System BIOS. However, if messaging and logging are desired at the console along with messages in HP Systems Insight Manager, an operating system must be used that has system management and agent support for Advanced Memory Protection.

Population order

- The two tables below represent the memory module population order for one processor. The population order for the other processor is identical. SR denotes Single Rank, DR denotes Dual Rank, and QR denotes Quad Rank.
- All memory modules must follow the population order shown in these two tables for both processors with the following exception:
- QR memory modules must be installed only in memory sockets 2, 5, 8, and 11, while following the population order for those memory sockets.

Processor memory socket	1	2	3	4	5	6
Rank support per memory socket	SR/DR	SR/DR/QR	SR/DR	SR/DR	SR/DR/QR	SR/DR
Population order	A	I	E	C	K	G
Processor memory channel	A	A	A	B	B	B

Memory

Processor memory socket	7	8	9	10	11	12
Rank support per memory socket	SR/DR	SR/DR/QR	SR/DR	SR/DR	SR/DR/QR	SR/DR
Population order	B	J	F	D	L	H
Processor memory channel	C	C	C	D	D	D

Population rules

When installing memory modules, observe the following population rules:

- Use only HP memory modules listed in this document.
- Advanced ECC is not available if x4 and x8 memory modules are mixed in channels (A and B), (C and D), or both, but standard ECC is still available. Advanced ECC is available if x4 and x8 memory modules are mixed in memory channels (A and C), (B and D), or both.
- No more than two UDIMMs may be installed per channel.
- Do not mix UDIMMs and RDIMMs within this server.

Population guidelines

While adhering to the memory population rules ("Population rules" - see above), performance can be improved by following the guidelines below:

- Memory modules may be installed one at a time per processor, but installing two at a time per processor provides for additional performance, installing four at a time per processor provides for better performance, and installing equal amounts of memory for both processors provides for best performance.
- Install all memory modules of the same speed on the same processor for best performance.
- Install all memory modules of the same voltage on the same processor for best power.

Memory bus speed

Depending on the quantity and native speed of memory modules installed, memory bus speeds can be 1333 MHz, 1066 MHz, 800 MHz, or 667 MHz. Memory bus speeds can be different for each processor.

To determine memory bus speeds, do the following:

Within RBSU, select the **Power Management Options** menu > **Advanced Power Management Options** menu > **Maximum Memory Bus Frequency** menu.

- Select one of the following menu options:
  - **Auto (default)** - The memory bus speed is set to what is shown in the following table. If the native speed of the installed memory module is slower than the memory bus speed, the memory bus speed is set to the memory module native speed

Memory

Memory modules per channel	QR	SR or DR	Memory module native speed	Memory bus speed (standard-voltage memory module)	Memory bus speed (low-voltage memory module)
1	-	1*	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1333 MHz	1066 MHz
1	1	-	QR 1066 MHz	1066 MHz	1066 MHz
2	-	2*	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1333 MHz	1066 MHz
2	1	1	SR 1333 MHz DR 1333 MHz DR 1066 MHz QR 1066 MHz	800 MHz	800 MHz
3	-	3 SR	SR 1333 MHz	1066 MHz	1066 MHz
3	-	3 DR	DR 1333 MHz DR 1066 MHz	1066 MHz	800 MHz
3	-	3 mixed	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1066 MHz	800 MHz
3	1	2	SR 1333 MHz DR 1333 MHz DR 1066 MHz QR 1066 MHz	800 MHz	667 MHz

*These are the only configurations supported by UDIMMs. All configurations listed in this table are supported by RDIMMs. This table is for reference only.

- 800 MHz-The memory bus speed is set to 800 MHz regardless of the quantity of memory modules installed, unless the table above reflects a slower memory bus speed.
  NOTE: There may be more than one memory bus speed menu option.
  NOTE: LVDIMM support is dependent on the ROM version

Memory Installation Examples

These memory installation examples show the memory sockets associated with the first processor only. If there is a second processor installed, like for a performance model, then these examples can be applied toward the memory sockets associated with the second processor also.

2 RDIMMs per processor

- Standard memory: 2x2GB RDIMMs (4GB per processor)
- Optional memory: Adding 10x8GB RDIMMs to standard memory (84GB per processor)
- Maximum memory: Replacing standard memory with 4x32GB QR RDIMMs and 8x16GB DR RDIMMs (maximum of 256GB per processor)

Processor memory socket	1	2	3	4	5	6
Standard Memory	2GB DR					
Optional Memory	2GB DR	8GB DR	8GB DR	8GB DR	8GB DR	8GB DR
Maximum Memory	16GB DR	32GB QR	16GB DR	16GB DR	32GB QR	16GB DR

Memory

Processor memory socket	7	8	9	10	11	12
Standard Memory	2GB DR					
Optional Memory	2GB DR	8GB DR	8GB DR	8GB DR	8GB DR	8GB DR
Maximum Memory	16GB DR	32GB QR	16GB DR	16GB DR	32GB QR	16GB DR

2 UDIMMs per processor

- Standard memory: 2x2GB UDIMMs (4GB per processor)
- Optional memory: Adding 6x4GB UDIMMs to standard memory (28GB per processor)
- Maximum memory: Replacing standard memory with 8x4GB UDIMMs (maximum of 32GB per processor)

Processor memory socket	1	2	3	4	5	6
Standard Memory	2GB DR					
Optional Memory	2GB DR		4GB DR	4GB DR		4GB DR
Maximum Memory	4GB DR		4GB DR	4GB DR		4GB DR

Processor memory socket	7	8	9	10	11	12
Standard Memory	2GB DR					
Optional Memory	2GB DR		4GB DR	4GB DR		4GB DR
Maximum Memory	4GB DR		4GB DR	4GB DR		4GB DR

4 RDIMMs per processor

- Standard memory: 4x2GB RDIMMs (8GB per processor)
- Optional memory: Adding 8x8GB RDIMMs to standard memory (72GB per processor)
- Maximum memory: Replacing standard memory with 4x32GB QR RDIMMs and 8x16GB DR RDIMMs (maximum of 256GB per processor)*

Processor memory socket	1	2	3	4	5	6
Standard Memory	2GB DR			2GB DR		
Optional Memory	2GB DR	8GB DR	8GB DR	2GB DR	8GB DR	8GB DR
Maximum Memory	16GB DR	32GB QR	16GB DR	16GB DR	32GB QR	16GB DR

Processor memory socket	7	8	9	10	11	12
Standard Memory	2GB DR			2GB DR		
Optional Memory	2GB DR	8GB DR	8GB DR	2GB DR	8GB DR	8GB DR
Maximum Memory	16GB DR	32GB QR	16GB DR	16GB DR	32GB QR	16GB DR

* If you have a 2P system and want the maximum memory of 512GB installed, you will need to replace all standard memory with 8x32GB QR RDIMMs and 16x16GB DR RDIMMs.

Memory

Following are memory options available from HP:

HP Memory

NOTE: DIMM banks are active only when the corresponding processor socket is populated.

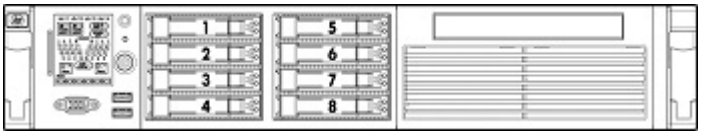
Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627808-B21
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627810-B21

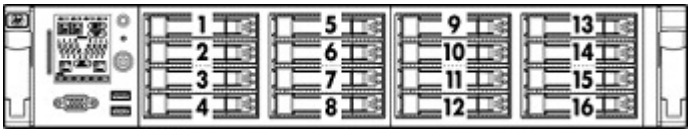
Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593921-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593923-B21

NOTE: PC3L is a low voltage memory



1-8 Eight SFF SAS hot plug hard drive bays



1-16 Sixteen SFF SAS hot plug hard drive bays
NOTE: This configuration does not support optical drive.
NOTE: This configuration requires a second controller or SAS Expander Card.

1-6 Six LFF SAS hot plug hard drive bays
NOTE: This configuration does not support optical drive.
NOTE: This configuration replaces SFF hard drive cage.

NOTE: Connect the SAS power cable from the primary drive cage (drive cage containing SFF drives 1-8 or LFF drives 1-6) to the primary SAS power connector on the system board. If a secondary drive cage (drive cage containing SFF drives 9-16) is installed, connect a SAS power cable from the secondary drive cage to the secondary SAS power connector on the system board. Refer to the hood label for SAS power connector locations on the system board.

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
Slim SATA DVD RW Optical Drive NOTE: Included in performance models.	Only 1 available removable media bay	Slimline bay	Integrated SATA
Slim SATA DVD-ROM Optical Drive	Only 1 available removable media bay	Slimline bay	Integrated SATA

Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.
NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
NOTE: IMPORTANT: Installation of both SAS and SATA hard drives or a mixture of SSDs and traditional hard drives in a single RAID volume is not supported.

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 10K	Up to 16	1-8	HP Smart Array P212/Zero Memory Controller
300GB 6G SAS 10K		1-16	HP Smart Array P212/256 MB Controller
146GB 6G SAS 15K		NOTE:	HP Smart Array P410/256 MB Controller

Storage

146GB 6G SAS 10K 72GB 6G SAS 15K	Depending on Model	HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
450GB 6G SAS 15K 300GB 6G SAS 15K	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
1TB 6G SAS 7.2K 500GB 6G SAS 7.2K	Up to 16	1-8 1-16 NOTE: Depending on Model	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 6G SAS 7.2K 1TB 6G SAS 7.2K	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
1TB 3G SATA 7.2K 500GB 3G SATA 7.2K	Up to 16	1-8 1-16 NOTE: Depending on Model	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller

HP Smart Array P812/512 BBWC Controller

SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 3G SATA 7.2K 1TB 3G SATA 7.2K 500GB 3G SATA 7.2K	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SATA Hot Plug 2.5" Enterprise Mainstream Solid State Drives

	Quantity Supported	Position Supported	Controller
400GB 3.0G SATA SSD 200GB 3.0G SATA SSD 120GB 3.0G SATA SSD 100GB 3.0G SATA SSD 60GB 3.0G SATA SSD	Up to 16	1-8 1-16	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
400GB 3.0G SATA SSD 200GB 3.0G SATA SSD 120GB 3.0G SATA SSD 100GB 3.0G SATA SSD 60GB 3.0G SATA SSD	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

Storage

6G SAS Hot Plug Enterprise Performance Solid State Drives

	Quantity Supported	Position Supported	Controller
200GB 6G SAS SLC SFF SSD 400GB 6G SAS SLC SFF SSD	Up to 16	1-8 1-16 NOTE: Depending on Model	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

6G SAS Hot Plug Enterprise Mainstream Solid State Drives

	Quantity Supported	Position Supported	Controller
800GB 6G SAS MLC SFF SSD 400GB 6G SAS MLC SFF SSD 200GB 6G SAS MLC SFF SSD	Up to 16	1-8 1-16 NOTE: Depending on Model	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
70 Modular Smart Array	Up to 2	External	HP Smart Array P212/ 256 MB Controller
	Up to 4	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G Flash Backed Cache Controller HP Smart Array P812/1G Flash Backed Cache Controller
D2600 Disk Enclosure	Up to 4	External	HP Smart Array P212/ 256 MB Controller
	Up to 8	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB Controller HP Smart Array P411/1G Flash Backed Cache Controller HP Smart Array P812/1G Flash Backed Write Cache Controller
D2700 Disk Enclosure	Up to 2	External	HP Smart Array P212/256 MB Controller
	Up to 4	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB Controller HP Smart Array P411/1G Flash Backed Cache Controller HP Smart Array P812/1G Flash Backed Write Cache Controller

Storage

Maximum Storage Capacity - (with MSA70)

Internal	16TB (16 x 1TB SAS SFF)
External	250TB (250 x 1TB SAS SFF)
Total	266TB

Tape and Disk Backup

NOTE: For the complete range of tape drives, autoloaders, libraries and media, including the internal fitting models, see: http://www.hp.com/go/tape. For the complete range of D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk and tape backup products see: http://www.hp.com/go/connect.

	Position Supported	Controller	Controller Part Number
HP SCSI Tape Drives LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	412911-B21
HP USB Tape Drives DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP SAS Tape Drives DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21

Storage

HP SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	412911-B21
HP SCSI Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Host Bus Adapter NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	AH627A
HP SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21
HP Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs.	N/A
HP USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750 RDX1TB	Internal or External	USB 2.0 Port	N/A
HP D2D Backup Systems, iSCSI D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
HP D2D Backup Systems, Fibre Channel D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/go/connect	N/A

Power Specifications

HP 460W Common Slot Gold Hot Plug Power Supply Kit							
Part Number	503296-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	460	460	460	460	460	460	460
Nominal Input Current (A rms)	5.5	4.5	2.6	2.5	2.4	2.3	2.2
Maximum Rated Input Wattage Rating (Watts)	526	520	505	505	503	503	503
Maximum Rated VA (Volt-Amp)	548	542	527	527	524	524	524
Efficiency (%)	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1794	1773	1725	1725	1715	1715	1715

HP 460W Common Slot Platinum Hot Plug Power Supply Kit							
Part Number	593188-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	460	460	460	460	460	460	460
Nominal Input Current (A rms)	5.3	4.3	2.5	2.4	2.3	2.2	2.1
Maximum Rated Input Wattage Rating (Watts)	512	505	493	493	492	492	491
Maximum Rated VA (Volt-Amp)	526	518	506	506	505	505	504
Efficiency (%)	89.8	91.2	93.2	93.3	93.5	93.6	93.6
Power Factor	0.985						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1747	1722	1683	1682	1679	1678	1677

Power Specifications

HP 750W Common Slot Gold Hot Plug Power Supply Kit							
Part Number	512327-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.9	7.4	4.3	4.1	3.9	3.7	3.6
Maximum Rated Input Wattage Rating (Watts)	857	847	824	824	820	820	820
Maximum Rated VA (Volt-Amp)	894	884	859	854	854	854	
Efficiency (%)	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	2925	2892	2812	2812	2797	2797	2797

HP 750W Common Slot Platinum Hot Plug Power Supply Kit							
Part Number	593831-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.6	7.1	4.2	4.0	3.8	3.6	3.4
Maximum Rated Input Wattage Rating (Watts)	841	828	809	808	807	806	805
Maximum Rated VA (Volt-Amp)	863	850	830	829	828	827	826
Efficiency (%)	89.2	90.6	92.7	92.8	93	93.1	93.2
Power Factor	0.985						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	2868	2825	2761	2757	2753	2749	2747

Power Specifications

HP 1200W Common Slot Platinum Hot Plug Power Supply Kit							
Part Number	578322-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.3	8.6	6.7	6.5	6.1	5.8	5.6
Maximum Rated Input Wattage Rating (Watts)	889	989	1290	1290	1290	1290	1290
Maximum Rated VA (Volt-Amp)	927	1031	1345	1345	1345	1345	1345
Efficiency (%)	90	91	93	93	93	93	93
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	10						
Maximum British Thermal Unit Rating (BTU-Hr)	3033	3375	4403	4403	4403	4403	4403

HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit			
Part Number	437573-B21		
Input Voltage Range (V rms)	36-72		
Frequency Range (Nominal) (Hz)	DC		
Nominal Input Voltage (Vrms)	36	48	72
Maximum Rated Output Wattage Rating	1200	1200	1200
Nominal Input Current (A rms)	38	28	19
Maximum Rated Input Wattage Rating (Watts)	1380	1350	1365
Maximum Rated VA (Volt-Amp)	1380	1350	1365
Efficiency (%)	87	89	88
Power Factor	N/A		
Leakage Current (mA)	N/A		
Maximum Inrush Current (A peak)	20	25	35
Maximum Inrush Current duration (mS)	1	1	3
Maximum British Thermal Unit Rating (BTU-Hr)	4713	4610	4662

NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor

- Click on "ProLiant Servers"
- Click on the Server of interest. Example: DL385 G7
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

System Unit	**Dimensions** (H x W x D) (with bezel)	3.38 x 17.54 x 27.25 in (8.59 x 44.54 x 69.98 cm)	
	Weight (approximate)	Maximum (all hard drives, power supply, and processor installed)	60 lb (27.22 kg)
		Minimum (one hard drive, power supply, and processor installed)	45.90 lb (20.81 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC
		Rated Input Current	For 1200 W Power Supply: 10 A (at 100 VAC), 4.9 A (at 200 VAC) For 750 W Power Supply: 8.9 A (at 100 VAC), 4.3 A (at 200 VAC) For 460 W Power Supply: 5.5 A (at 100 VAC), 2.6 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	For 1200 W Power Supply: 930 W (at 100 VAC), 1348 W (at 200 VAC) For 750 W Power Supply: 857 W (at 100 VAC), 824 W (at 200 VAC) For 460 W Power Supply: 526 W (at 100 VAC), 505 W (at 200 VAC)
	BTU Rating	Maximum	For 1200 W Power Supply: 3530 BTU/hr (at 100 VAC), 4600 BTU/hr (at 200 VAC) For 750 W Power Supply: 2925 BTU/hr (at 100 VAC), 2812 BTU/hr (at 200 VAC) For 460 W Power Supply: 1794 BTU/hr (at 100 VAC), 1725 BTU/hr (at 200 VAC)
	Power Specifications	NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor	
	Power Supply Output (per power supply)	Rated Steady-State Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC),

		750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
	Maximum Peak Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	

Idle		1P SKU	2P SKU
	LWAd	4.1 B	4.5 B
	LpAm	23 dBA	25 dBA
Operating		1P SKU	2P SKU

		LWAd	5.3 B	5.6 B
		LpAm	36 dBA	38 dBA
	Emissions Classification (EMC)	FCC Rating	Class A	
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1	

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

HP Integrated Lights-Out 3 (iLO 3) integrated on system board	Architecture	PCI Express based health and remote management ASIC
	Processor	PCI Express RISC processor core running at 250MHz
	Upgradeability	Option firmware upgradeable via Flash ROM.
	Video Support	1600 x 1200 DVR max resolution
	Interfaces	One Ethernet Sideband connection (10/100/1000 Mb/s)
		One Ethernet network connection (10/100Mb/s)
	Memory	128-MB DDR with ECC
	Operating System Support	Microsoft Windows 2008 R2
		Microsoft Windows 2008 (32 bit and 64 bit)
		Microsoft Windows Server 2008 Standard Edition (32bit and 64bit)
		Microsoft Windows Server 2008 Enterprise Edition (32bit and 64bit)
		Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Extended Systems Standard Edition, Enterprise Edition
		Red Hat Enterprise Linux 5.4 (32 bit and 64 bit)
		SUSE Linux Enterprise Server 11 (32bit and 64bit)
		SUSE Linux Enterprise Server 10 (32bit and 64bit)
		VMware ESX 4.0
		VMware ESX 3.5.0
	Client System Support	Microsoft Windows 7
		Microsoft Windows XP Professional Edition
		Microsoft Windows Vista Business and Ultimate Editions
		Red Hat Enterprise Desktop 5.00
		SUSE Linux Enterprise Desktop 11
		SUSE Linux Enterprise Desktop 10

	Client Browser Support	Microsoft Internet Explorer 8 Microsoft Internet Explorer 7 Microsoft Internet Explorer 6 Firefox 3.5 (on supported Windows and Linux systems) Firefox 3.0 (on supported Windows and Linux systems)
	Command Line Support	Secure Shell and serial port access Secure Socket Layer Secure Shell version 2
	Security	Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface AES encryption of video RC4 encryption of video
	Directory Support Services	Active Directory v1.0 (Windows 2003)
	Driver Support	HP ProLiant iLO3 Management Controller Driver Package
	Management protocols supported	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML
Smart Array P410i Controller	Dimensions	Embedded
	Disk Drive and Enclosure Interface - Transfer rate	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal 4X connectors
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus
	Server Interface	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
	SAS Speed	8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 256MB ECC protected cache (battery upgrade available) 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC
	Logical Drives Supported	Zero Memory, Up to 2 logical volumes (8 physical drives) Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) NOTE: RAID 6, 6+0 can be enabled with one of the following combinations: • 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades • 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades • 1G FBWC and Smart Array Advanced Pack License key option upgrades RAID 5, 5+0 (Distributed Data Guarding) NOTE: A minimum or 256 MB cache is required to enable RAID 5, 5+0 support RAID 1+0 (Striping & Mirroring)

		RAID 0 (Striping), RAID 1 (Mirroring)	
Two HP NC382i Dual Port Multifunction Gigabit Server Adapters	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Controller	Broadcom5709C	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000Mb/s
	Connector	Two RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000BaseTX	Category 5 or higher UTP; up to 328 ft (100 m)
Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.	

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.